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PUNICA GRANATUM (LYTHRACEAE) REAFFIRMED AS A COMPONENT OF THE ARKANSAS FLORA

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ABSTRACT

A recent occurrence of *Punica granatum* L. outside of cultivation is documented in the Arkansas flora. This record represents only the third known occurrence of the genus *Punica* outside of cultivation in the state, and the only one for over a decade. *Punica granatum* was first documented for Arkansas by Peck in 2003, based on specimens from Little River and Pulaski counties; however, *P. granatum* was subsequently not included in the 2006 *Checklist of the Vascular Plants of Arkansas* or the 2013 *Atlas of the Vascular Plants of Arkansas*. This paper serves to reaffirm the presence of *P. granatum* in the Arkansas flora. In 2015, one spontaneous plant of *P. granatum* was observed growing at the edge of a storm drain along a street in a residential area of Arkadelphia in Clark County. Photographs of the spontaneous plant in habitat, along with plants of the species, are provided.

Punica granatum L. is a large, thorny, deciduous shrub or small tree to 5 or 6 meters tall that is native to Europe and Asia (Bailey & Bailey 1976; Krüssmann 1978; Qin & Graham 2007; Fig. 1). This species is the pomegranate of commerce, and it is frequently cultivated in warm regions as an ornamental for its attractive flowers and foliage and for its edible fruits (Bailey & Bailey 1976); it has been cultivated in the Middle East for millennia. The edible, juicy covering surrounding individual seeds is actually a portion (sarcotesta) of the seed coat (Qin & Graham 2007). Although taxonomic placement within the Lythraceae is strongly supported (Graham et al. 2011), traditionally *P. granatum* has been separated into its own family, the monogeneric Punicaceae (Rana et al. 2010).

A dwarf variety of *Punica granatum*, often referred to as the cultivar 'Nana'—*P. granatum* L. var. *nana* (L.) Pers., also is sometimes cultivated (Bailey & Bailey 1976; Krüssmann 1978). It is similar to the species but has smaller leaves, flowers, and fruits and reaches a maximum size of only about 2 meters (Bailey & Bailey 1976; Krüssmann 1978).

Punica granatum is regularly cultivated in Arkansas. Some plants readily produce fruits, whereas others do not; this discrepancy may be owed to the fact that some cultivars of *P. granatum* apparently require cross–pollination for successful fruit set. The growing season in southern Arkansas is generally long enough for fruits to mature and ripen. The fruits are edible and similar in form and quality to commercially available pomegranates, and in at least some instances the seeds are viable (Serviss, unpublished data). Plants also are easy to cultivate, long–persistent subsequent to such practices, and may increase vegetatively via root suckers once established.

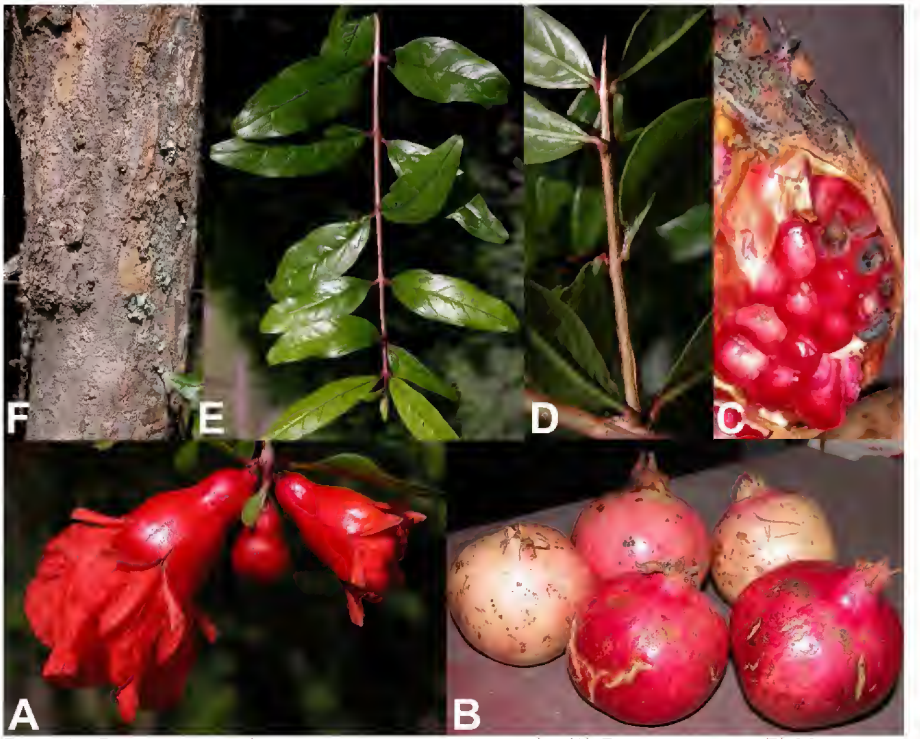

Figure 1. *Punica granatum* (from cultivated plants in Arkansas). (A) Flowers and bud. (B) Mature fruits showing some of the range of color variation that may be encountered. (C) Seeds showing sarcotestas. (D) Thorn. (E) Leaves and stem; notice the conspicuous red-colored petioles. (F) Older bark.

Based on these qualities, the presence of spontaneous plants of *Punica granatum* in Arkansas is not surprising. *Punica granatum* has been reported previously as a waif and/or a component of the naturalized floras of a number of southern states, including several parishes in adjacent Louisiana (Thomas & Allen 1998; Kartesz 2015; Weakley 2015; USDA, NRCS 2016).

Punica granatum was first documented for the Arkansas flora by Peck (2003), based on specimens of spontaneous/naturalized plants from Little River and Pulaski counties; however, the species was subsequently not included in the 2006 *Checklist of the Vascular Plants of Arkansas*, nor the 2013 *Atlas of the Vascular Plants of Arkansas* (Arkansas Vascular Flora Committee 2006; Gentry et al. 2013). Furthermore, to our knowledge, naturalized *P. granatum* has not been documented in Arkansas for over a decade. Our record represents only the third occurrence of the genus *Punica* outside of cultivation in the state and reaffirms the presence of *P. granatum* as a component of the state's flora.

In 2015, one spontaneous plant of *Punica granatum* was observed growing at the edge of the intake of a storm drain along a street in a residential area of Arkadelphia in Clark County (Figs. 2–3). No cultivated plants of *P. granatum* were observed in the immediate vicinity of the spontaneous

individual; however, a large, reproductive–age individual of *P. granatum* is cultivated about one block south of the site. Based on a conversation with one of the residents, the street where the spontaneous *P. granatum* plant is located periodically floods, with water sometimes rising over the curb and flooding lawns. It is plausible that storm water could have transported fruits and/or seeds from the cultivated *P. granatum* plant, or perhaps seeds from fruit discards, to the drain. Fruits or seeds could have become trapped at the opening of the drain, where a space is present between the street and the curb, and subsequently given rise to the spontaneous *P. granatum* plant. Of course, the origin of the spontaneous plant is unknown, but it is clearly evident that it was neither planted nor produced as a root sucker from a larger plant. Based on its frequency of cultivation and ability to produce viable seed, *P. granatum* should be expected elsewhere in Arkansas outside of cultivation.

In the Arkansas flora, it is possible with sterile material to confuse *Punica granatum* with *Pyracantha koidzumii* (Formosa firethorn) and smaller specimens of *Sideroxylon lanuginosum* (gum bumelia); however, *P. granatum* may easily be distinguished from both species by its glabrous foliage, petioles that are typically red in color, large (ca. 3–6 cm long by 2–4 cm wide, sometimes wider in forms with doubled flowers), solitary or 2–5–clustered, red to orange–red–colored flowers with thick, coriaceous calyces, and large (ca. 5–13 cm in diameter), solitary, yellow, yellowish–pink, pink, or red–colored fruits. Both *S. lanuginosum* and *P. koidzumii* (at least on new growth) have densely pubescent foliage, particularly the stems and undersurfaces of the leaves, and small, white to off–white–colored flowers that are densely clustered in the inflorescences. In addition, the fruits of both species are considerably smaller than those of *P. granatum*, and *S. lanuginosum* has purplish–black to black–colored fruits when mature.

Figure 2. Spontaneous plant of *P. granatum* in Clark County. (A) Close–up of plant showing leaves, stems, and new growth. (B) Plant and habit.

Figure 3. Distance view of the spontaneous plant of *Punica granatum* in Clark County showing size and position of plant relative to storm drain and street.

Voucher specimen: **Arkansas.** Clark Co.: One spontaneous plant growing in crack at edge of street at opening of storm drain, intersection of Henderson Street and 13th Street, Arkadelphia, 21 Oct 2015, *Serviss 8204* (HEND).

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